



# TISSUE ISSUE

**Issue Three  
November 2007**

**New Zealand Wound Care Society Newsletter**  
For more information & membership forms visit: [www.nzwcs.org.nz](http://www.nzwcs.org.nz)

## **Editors of Tissue Issue**

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## **What is the New Zealand Wound Care Society?**

The NZWCS is a voluntary organisation made up of health care professionals from a variety of disciplines who share a common interest in wound management. As an organisation it gives its members an opportunity to share experience, expertise and knowledge providing a forum to network with other members throughout the country.

Currently there are fourteen branches New Zealand-wide. Each has an area coordinator and a national committee member. The area coordinator is responsible for coordinating meetings and seminars for the local branch members, while the national committee member represents each branch at a national level. In some areas these duties are undertaken by the same volunteer.

Welcome to the Summer Issue of the Tissue Issue.

The conference organisation is in full swing and for those of you going we look forward to catching up with you all. Check out the latest courses available in wound management. The latest AGM was a great time to catch up and see where the various projects that the NZWCS are at. Congratulations to our new Treasurer Emil Schmidt Wound Care Specialist Dunedin Hospital; Emil can be contacted at [emils@healthotago.co.nz](mailto:emils@healthotago.co.nz); phone: +64 (3) 474 0999 Ext. 8899. A big thank you though to Wayne for his dedication and commitment he has shown to the society as treasurer and we hope that he manages to remain active within the society despite his busy schedule. Unfortunately Cheryl our NZWCS Administrator is also saying goodbye to pursue further studies; we thank Cheryl for all her years of enthusiasm and hard work; her sparkling personality will be missed by us all. Jeannette Henderson is our new administrator, Jeannette can be contacted at [administrator@nzwcs.org.nz](mailto:administrator@nzwcs.org.nz); welcome Jeannette to the NZWCS we all look forward to meeting and working with you.

If you would like to publish in next years newsletter please do not hesitate to contact the editors. We would be happy to publish case studies or some practice tips that you have. This issue we are building on the theme of using current research to base our practice decisions on. Julie Betts Nurse practitioner and local honey expert has shared her recently published article with us. We have had some queries around honey; we anticipate Julie's article will answer many of those questions. Thank-you Julie for sharing this with us! And thank you to Comvita for sponsoring colour printing of this newsletter to be available at our conference in Queenstown.

## **New Courses / Education Opportunities**

### **1. Wound Management in Cancer and Palliative Care**

This course has been written to provide up-to-date information on skin care and wound management for cancer and palliative care patients. The course is separated into five main modules focusing on the basics of wound care, management of skin changes, management of specific wounds, dressing products, and on the psychosocial issues surrounding wound care. Ease of access and understanding have been key themes underlining the style and layout of the course, as has the provision of information at a level that will suit all carers.

The Wound Management in Cancer and Palliative course has been written by Wayne Naylor, Nurse Educator - Lecturer, at the Wellington Blood and Cancer Centre, New Zealand. The course has been reviewed by a team of health professionals from across the world and has been developed with the support of an educational grant from Help the Hospices in the UK (<http://www.HelpTheHospices.org.uk>).

The course can be accessed free by registering on the CancerNursing.org website at <http://www.cancernursing.org>

## **Inside this issue:**

- Welcome!
- Conference update
- Wound management courses 2008
- Honey article Julie Betts
- Practice Tips
- Questions for the experts

**NZWCS National Committee  
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**NZWCS Education Events  
Coordinator Sue McAuley,  
email: mcauley.s@xtra.co.nz**

**Sue's Role:**

- Educational liaison between NZWCS National Committee, Area Coordinators and Commercial members.
- Liaise and assist Area Coordinators to plan wound education, utilizing opportunities of international and national speakers.
- Plan and coordinate advanced wound care study days.

## **2. Nurse Practitioner Wound Specialist Course**

The Cambridge Hotel (Sydney)

23-24 November 2007 (Plus Post Course Teleconference Case Review)

Time: 8am – 5pm Course Price: \$795

This course is designed for wound specialists clinicians at Nurse Practitioners level (including nurse practitioners in transition and in training). The course further develops and builds on the knowledge, values, skills, networking and practice of the advanced wound clinician as defined in the ANMC Competency Standards for Nurse Practitioners.

If you wish to attend, please email Clare Lahoud at [HemiAustralia@aol.com.au](mailto:HemiAustralia@aol.com.au)

Should you require further information, please contact: [HemiAustralia@aol.com.au](mailto:HemiAustralia@aol.com.au)

## **FEATURE ARTICLE**

### **MANUKA HONEY IN WOUND CARE**

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The practice of using honey in wound care is not new. While it may be considered an emerging therapy in today's practice it has been used by mankind for the last 4,500 years as a wound dressing. The first recorded evidence of honey being used in wound care was in 2600 BC in the Smith Papyrus, where the challenges of keeping honey on wounds was noted (R. Jones, 2001). Ancient practitioners such as Aristotle and Dioscorides discovered that honey was useful to treat ulcers, sores, and throat and eye infections. They also recorded that not all honey's were equal in their effect in treating wounds, noting that some honey's were better than others (Gunther, 1934). Throughout time honey has continued to be used in wound care until it was displaced by the discovery of penicillin in the 1940's. Honey's recent rediscovery as a wound dressing is largely based on the increasing challenge of managing bacteria in wounds, and the fact that many of the properties of honey enhance wound healing.

#### **Why honey as a dressing?**

Honey has several properties that make it useful in wound care. While honey is most predominantly used for its antimicrobial action, it has many other actions that make it useful in wound care. These include its anti-inflammatory effect, control of malodour, debriding action, enhancement of angiogenesis and collagen synthesis, reduction in scarring, provision of moist wound environment and low adherence at dressing change (Gethin, 2004; K. Jones, 2001; Molan, 2005).

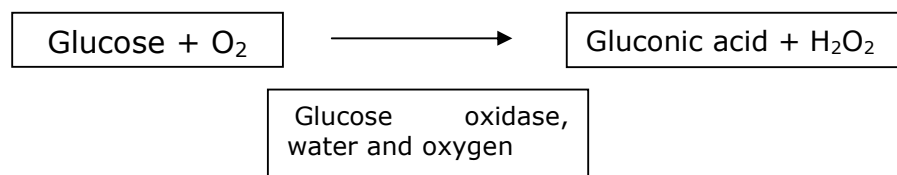
#### **Honey as an anti-microbial agent**

Honey inhibits a wide range of gram negative and positive bacteria including methicillin resistant staphylococcus aureus and vancomycin resistant enterococcus (Cooper, 2005). Honey inhibits bacterial growth due to a number of factors including its acidity (ph 3.5), low level of available water for bacterial growth (most of the water in honey is tied up in the glucose molecule) and the production of hydrogen peroxide (Cooper, 2005). The production of hydrogen peroxide occurs when the honey is diluted by exudate, which initiates the conversion of glucose to gluconic acid and hydrogen peroxide (Fig.1). The conversion of glucose to gluconic acid and hydrogen peroxide is generated by the enzyme glucose oxidase that the bees transfer into the honey. Glucose oxidase becomes active on dilution and in the presence of oxygen (Molan, 1992). Maximum anti-microbial effect is reached when the honey is diluted 50 percent. This means that a delay in antibacterial action can be anticipated with honey's

reliance on hydrogen peroxide for antibacterial action. In addition to this hydrogen peroxide is degraded by catalase, an enzyme contained in serum,

erythrocytes and cells (Molan, 2005). This means hydrogen peroxide anti-microbial effect in wound care has limited capacity or longevity in its action.

**Figure 1. Production of hydrogen peroxide from honey**



### Websites of Interest

Waikato Honey Research Unit  
[http://bio.waikato.ac.nz/honey/the\\_way.shtml](http://bio.waikato.ac.nz/honey/the_way.shtml)

Comvita Honey Wound Products  
<http://www.comvita.com/index.html>

Community-based interventions for the prevention of burns and scalds in children  
<http://www.mrw.interscience.wiley.com/cochrane/cls/ysrev/articles/CD004335/frame.html>

Hyperbaric oxygen therapy for thermal burns  
<http://www.mrw.interscience.wiley.com/cochrane/cls/ysrev/articles/CD004727/frame.html>

Topical negative pressure (TNP) for partial thickness burns  
<http://www.mrw.interscience.wiley.com/cochrane/cls/ysrev/articles/CD006215/frame.html>

Access to nursing journal articles  
[www.nursingcenter.com](http://www.nursingcenter.com)

Management of Burns and Scalds in Primary Care  
<http://www.nzgg.org.nz/index.cfm>

Apart from the action of hydrogen peroxide in inhibiting bacterial growth, other honey such as manuka also contain a phytochemical compound which is anti-microbial. The phytochemical compound is derived from flavenoids from the leptospermum (manuka) tree. While the anti-microbial effect of the pythochemical compound is separate from that provided by hydrogen peroxide, it is equal in effect (Cooper, 2005). Characteristics of the phytochemical have not yet been identified or published. The phytochemical compound in manuka honey is not reliant on dilution to become active and is also not destroyed by catalase; therefore theoretically it is likely to be the most effective anti-microbial honey (Cooper & Molan, 1999; Willix, Molan, & Harfoot, 1992).

### Other properties of honey that enhance wound healing

Some evidence exists that suggests honey has anti-inflammatory properties. This is thought to be due to the high osmolarity of honey drawing fluid out of the base of the wound and reducing inflammation of cells mechanically, as well as the anti-oxidants in honey that reduce free radicals in the wound responsible for chronic inflammation and abnormal scarring (Molan, 2005). Human and animal studies have shown an reduction in inflammation clinically as well as histologically (Kingsley, 2005; Oryan & Zaker, 1998; Postmes, Bosch, Dutrieux, J van Baare, & Hoekstra, 1997; Subrahmanyam, 1998).

Honey has also shown to enhance autolytic debridement and phagocytosis. This is also due to the high osmolarity of honey drawing interstitial fluid from the base of the wound maintaining a moist environment, as well as providing fuel in the form of glucose required for macrophage function, and in the conversion of plasminogen to plasmin which assists in the breakdown of fibrin that holds slough onto the wound bed (Molan, 2005).

Honey also enhances angiogenesis and collagen synthesis. This is thought to be achieved by the acidity of honey causing a release of oxygen from haemoglobin, as well as the stimulatory effect of hydrogen peroxide activating insulin receptors complexes on cells and proliferation of fibroblasts (Chung, Schmidt, Andrews, & Turner, 1993; Helm & Gunn, 1986; Kaufman, Eichenlaub, Angel, Levin, & Futrell, 1985; Koshio, Akanuma, & Kasuga, 1988).

### How to use honey as a dressing

Honey can be used on a variety of wounds including pressure ulcers, leg ulcers, surgical wounds, burns, graft sites, abscesses, sinus, boils, skin tears, infected wounds and different tissue types such as slough, granulation and epithelial tissue. Honey can be used on necrotic tissue if there is sufficient exudate. If the necrotic tissue is dry diluting the honey with saline or using a gel to moisten the necrotic tissue is more appropriate to avoid dehydrating the necrotic tissue further. Once the necrotic tissue begins to produce exudate full strength honey can then be applied to the tissue.

Currently, two forms of honey are available for use in wound care. Liquid honey or honey impregnated dressings. Honey impregnated dressings consist of honey impregnated into an alginate fibre dressing. The choice of which type of honey to apply to any wound depends on wound size, depth, location and level of exudate.

### Application of liquid honey in wound care

The use of liquid honey products in wound care is recommended for low exuding wounds. The honey should be applied directly to the base of the wound or skin surface (in the case of boils) and covered with a film coated low adherent dressing or film membrane dressing. The level of exudate and how quickly the honey becomes diluted determines the frequency of dressing change. Once honey is diluted by 90 percent it will no longer be effective. For this reason it is advisable to change dressings before the honey is completely washed away. This may mean dressing changes ranging from daily to every 3 days.

## Practice Tips

From Wayne Naylor

### Malodorous wounds

As well as topical Metronidazole, the use of oral Metronidazole 200mg three times a day can be very helpful for odour control. At this reduced dose the patient is less likely to suffer from side-effects, such as nausea, alcohol intolerance and peripheral neuropathy (with long term use).

### Breast / chest dressing fixation

The breast and chest area can be a difficult area to dress, especially if you need to avoid adhesive tape. A good retention garment can be made by modifying a pair of elastic netting pants. Cut open the crotch seam of the pants then make two cuts about 7cm long in either side of the pants to create shoulder straps. This prevents the garment slipping down. Having the waist band at the bottom of the garment helps pull it in to prevent the dressing falling out the bottom. The example below has used X-Large Molipants (Hartmanns), which have a reinforcing seam that can be cut between to make the straps and which prevents the garment unravelling.



## Application of honey impregnated dressings in wound care

The use of honey impregnated alginate dressings in wound care is recommended for low, moderate and heavily exuding wounds. Once again these dressings should be applied directly to the base of the wound and cut to the size of the wound. These dressings can be used to pack cavities by filling the cavity with several layers of the alginate dressing. Recommended secondary dressings usually consist of absorbent gauze dressings or pads.

Again, level of exudate and how quickly the honey becomes diluted determines the frequency of dressing change. Generally once the honey is washed out of the carrier dressing it should then be changed. This may mean dressing changes as frequently as twice daily for heavily exuding wounds to daily alternate or up to 7 days for low exuding wounds. Initially wounds may need monitoring daily to determine the frequency of dressing change. Impregnated honey dressings can be used under compression bandaging as the release of honey occurs over a longer time period.

Pain can be an issue in applying honey to wounds. This is due to the acidity of honey and can vary from a transient stinging in some patient's to marked pain that can last for an hour or more. The use of pre-dressing analgesia is useful for patients where pain is anticipated. If a patient is experiencing pain with honey I have noticed the pain reduces with the application of an impregnated honey dressing. This suggests that the pain from honey may also related to the volume of honey directly in contact with the wound bed.

### Why would you use honey dressings?

Apart from the obvious benefits in using honey for its antimicrobial effect to control bacterial burden in wounds, it also offers benefits in its anti-inflammatory action, control of odour as well as its stimulatory effect on cellular processes of wound healing. For these reasons honey not only offers benefit where you want a combined antimicrobial, anti-inflammatory and a "kick start" of the process of healing, but also as a dressing in wounds where bacterial burden is not a problem and therefore is applicable for use in most wounds.

From a management point of view honey is an easy dressing to use, as it can be applied to most wounds and little knowledge is required for its use apart from changing the dressing when the honey has almost been washed away. This also makes it a relatively easy dressing for patients' to use themselves.

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Feedback from conference

*Have a great Christmas and New Year*

